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Impact of Health Education in Changing Knowledge, Attitudes and Practices in Caregivers of Malnourished Children in Bobirwa District, Botswana

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Abstract

Purpose: To explore performance of Health Education (HE) component of Bobirwa District Malnutrition Rehabilitation program in Botswana.

Setting: Under-five Malnutrition is persistent in Bobirwa District in spite of the rehabilitation program which consist of facility based complimentary feeding and HE.

Methodology: Between August 2015 and August 2016, we enrolled 101 pairs of malnourished children and their caregivers in a mixed methods observational study. Baseline anthropometric measures and data concerning knowledge, attitudes and practices (KAPs) of the caretakers were taken. Progress was tracked monthly for 4 months. Only KAP progress is reported here.

Findings: Only 38.3% of clients showed improvement in KAPS by the end of the study. There was a statistically significant difference between age and change in KAP, $\chi^2 = 35.846$ (p=

0.000). There was a statistically significant difference between education level of caregivers and change in KAP, χ^2 = 118.49 (p= 0.000). There was statistically significant difference between Health care worker teams (clinics) and change in KAP, Fishers statistic =23. 943 (p= 0.001). The Phi coefficient (φ) was 0.545.

Clients expressed little ownership of the program.

Conclusion: Health education performed poorly in improving KAPs. Based on difference in performance based on education level, age and particular HCW teams administering the program, there is potential for improvement

Recommendation: The study recommends nutrition refresher training to Health Care Workers. It also advises refocusing of the nutrition rehabilitation program to include community engagement from inception to the administration and evaluation of the program.

Key words: *Malnutrition, Feeding Practices, Food Security and Knowledge, Attitudes & Practices, Botswana.*

1.1 Introduction

Malnutrition rehabilitation in the District is guided by the Community Based Management of Acute Malnutrition (CMAM) program whose policy document was launched in 2009. By design, identification of malnourished children was intended to be primarily through community based structures and processes. After identification, they would be referred to health facilities. The health facilities would assess the referred children and triage them into various categories. This triage process would lead to differentiation into three categories. This grouping would guide the consequent management process. The first group, being the vast majority, would be managed in the community. The second group would require care in the Primary Health Care (PHC) facilities as outpatients requiring a strong community based supervision and follow up. It was only the very sick (third group) that would be admitted for hospital based care.

Regardless of the category they were triaged into, all children would be followed up in the community upon completion of the health facility based part of their treatment.

Around the same time of the launch, health services were restructured in a way that affected the Public Health programs significantly. Most of PHC services, which included community based

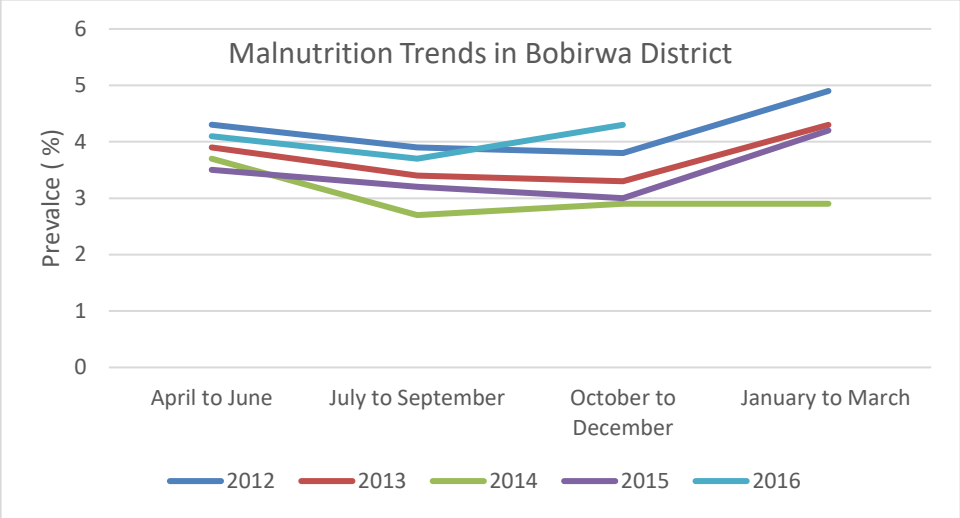
structures, and running of clinics, had been under the Ministry of Local Government. Needless to say, the parent Ministry had built structures to manage, support and fund these functions.

During the restructuring, all these functions were taken over by the Ministry of Health. The latter was ill-equipped to take on these "lower level" of care roles. The governing bodies in the Ministry of Health, both at ground and policy making levels in the health system, were not conversant with the networks that supported these functions. There were no plans or funding for some vital functions. Some critical personnel who understood them remained under Local Government. On top of all this, the hand over/takeover was unstructured, ill-defined and discretionary. This meant that the knowledge and skills for managing these processes remained under Ministry of Local Government. All these negatively affected Public Health program implementation, and the CMAM program was no exception.

As the program had just been launched, its establishment was far from firm. The running thereof became poorly managed, and had no consistent inter or even intra –district structure or framework. Districts in the country implemented it differently with little adherence to the original program guidelines. Moreover, community based components of the program in particular were weak and ineffective.

1.2 Program performance

The pattern of prevalence of malnutrition has been showing a seasonal pattern in the district. Trends in the last five years generally show an upward tendency between January and March.



Source: District Health Reports

Figure 1: Malnutrition Trends in Bobirwa District

There are several factors thought to contribute to this trend. One is the possible increase in diarrhea cases which might be associated with malnutrition (Mach et al, 2009). The second factor is migration to food scarce areas. It is a common observation that people migrate from villages to farms and cattle posts, where food and care for children may not be as easily available as compared to the villages. This is thought to contribute significantly to malnutrition because in the feeding program, caregivers are unavailable. A third factor often cited is that malnutrition levels go down after harvests, which occur around March.

However, none of these has been proven. Diarrhea cases have not been observed to routinely escalate every year, and it is unclear how much harvests contribute to household food supply. Therefore, the real reason remains unclear.

1.3 Hypothesis

Given that the program running indicates almost non -existent community involvement it is suspected that there is little buy in from the caregivers. As can be seen from the prevalence rates, the program seems to be ineffective in reducing the rates. The health education component of the malnutrition rehabilitation program, like the program as a whole, is hypothesized to be inefficient.

1.4 Objectives of the study

The overall objective was to appraise the effectiveness of the malnutrition rehabilitation program. Specifically it was to;

1. Assess the change (rate and magnitude) in anthropometric parameters in children on the program
2. The change in KAPs in caregivers of malnourished children to child feeding and the rehabilitation program.

2.1 Methodology

Mixed qualitative and quantitative methods of presentation offers a comparatively more understanding of a topic and is supported by both theory (Creswell, 2003) and practice (Munuo et al, 2016). Creswell in this quoted book postulates that the advancing field of mixed research offers a broader understanding of the context with which measurements and observations acquired in "unmixed" traditional approaches occur. Munuo and colleagues in this quoted paper present their results in such hybrid format. It is the format adopted in this paper.

This was a mixed methods prognostic cohort observational study conducted to appraise the effectiveness of the malnutrition rehabilitation program.

Between August 2015 and August 2016, we enrolled 101 dyads of malnourished children with their caregivers into the study. They were identified in the CWCs in Health facilities as described above.

Recruitment

They were recruited as follows;

Inclusion criteria

Children- Children 6 months to 59 months presenting with malnutrition in clinics and health posts.

Caregivers- Their regular caregivers will be identified by direct inquiry from the one who brought the child and verified by a visit to the household.

Exclusion criteria

Children

1. Presence of Severe Acute Malnutrition requiring hospitalization
2. Less than 6 months of age
3. Suspected or diagnosed illness e.g. Tuberculosis (TB), chronic diarrhea. HIV status was not considered and was not enquired for at recruitment.

Procedure

After identification by the clinic staff, potential subjects were requested for their consent to participate in the study. After informed consent, we administered a questionnaire documenting their demographics, information on household food security, income and diet habits. We obtained the caregiver knowledge, attitudes and practices (KAPs) on causes of malnutrition and young child feeding. We recorded baseline anthropometric measurements on the malnourished child as taken by the clinic staff using the weighing scales usually used at the clinic.

There were no additional interventions given other than the ones routinely given in the regular rehabilitation program described above. Follow-up was on monthly basis. On each visit, we administered a follow-up questionnaire capturing information on any morbidity occurrence and how they were addressed, mode of care, and feeding environment of the child. A 48-hour recall on foodstuffs fed to the child was obtained. Information on food availability for the family during the previous period was captured. Knowledge and attitudes were also tracked to detect any changes assuming that the health education given during the direct feeding sessions would lead to improvement in KAPs.

We took follow up anthropometric measures to detect any improvements. The subjects were followed up for 4 months or until their weights improved to 10% of baseline.

3.1 Data Collection

We used questionnaires recommended WHO/UNICEF for nutrition survey. They were adapted to fit the local situation. They contained both structured questions and a portion where the subjects could express their opinion in their own words.

They were piloted before the study and adjusted according to the response of the first few subjects who were made aware that we were piloting the tools. The tools were in either Setswana or English and they were administered by the trained research assistant in the language of the subject's preference. The vast majority of subjects preferred Setswana.

3.2 Data Processing

Quantitative data was processed using SPSS. Association between categorical variables (age and education level) and improvement of KAPs were tested with the chi square test. Fisher's exact test was used to test site of program administration and improvement. The level of significance was set at p values of 0.05. Qualitative data was grouped into thematic groups and analyzed manually.

3.3 Ethical Issues

Written permission was obtained from the Health Research Unit of the Ministry of Health and the head of clinics where data was collected. Documented consent was obtained from each caretakers before data collection. Forms were available in both English and Setswana and were administered in the language of choice.

4.1 Results

The following Table 1 shows the demographic profile of the caregivers.

Table 1: Demographic characteristics of caregivers

Demographic characteristic		Number	Percentage (%)	Comments
Caretaker category	Mother	64	63.4	In 4 respondents, the father was actively involved and helping the mother in the care of the child
	Grandmother	19	18.8	
	Aunt	4	4	In one case father was actively involved and helping the aunt
	Father	3	2.9	These are the cases the father was the major caretaker. In total, there were 8 cases (7.9%) where the father was actively involved
	Other	6	5.9	These were mostly more distant relatives
Marital status of mother	Single	89	88.1	
	Married	4	4	
	Separated	7	6.9	
	Widowed	1	1	

4.1.1 Age Profile of the Caregivers

Actual caregivers (as opposed to mothers) are the ones who received health education. The following graph shows the age profile of caregivers.

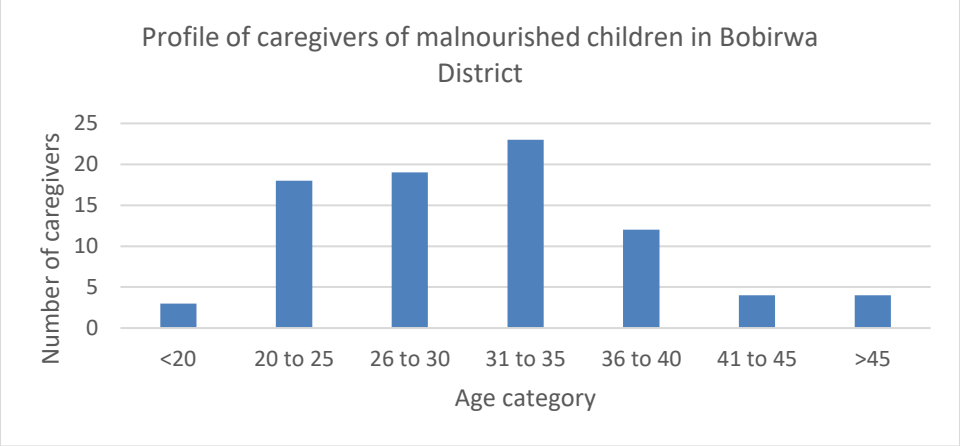


Figure 2: Age profile of caregivers of malnourished children in Bobirwa District

Most caregivers are below 45 years of age. The almost normal distribution centered around 31 to 35 years, with a slight positive skew indicates that most caregivers are young. Considering the

information on Table 1, the younger are mostly mothers, and the few older caregivers the grandmothers.

Changes in KAPs

Of the 101 subjects in the sample only 36 (38.3%) participants showed any improvement on KAPs.

Effect of age on improvement of knowledge

We divided the age profile into two groups; one below 35 years, and the other 35 years and above. This was based on the approximate location of central tendency parameter- the mean and mode as seen in the distribution curve.

KAP improvement score was categorized into either having improved during the study at any time, or not.

The following Table 2 shows the outcome on KAP improvement associated with age.

Table 2: Cross tabulation between age and improvement of knowledge

Outcome / Age category	Improvement	No improvement	Total	Chi (P value
Below 35	32	47	78	
35 and above	7	16	23	
Totals	40	64	101	**χ^2=35.846 (p=0.000)**

A chi-square test was conducted to explore whether age difference was associated with change in KAP score, using the two categories on one hand and improvement in KAP score on the other. All cells had expected values higher than 5.

As can be seen, there was a statistically significant difference between age category and change in KAPs

4.1.2 Effect of level of education of caregivers on improvement in KAPs

Figure 3 shows the education levels of the caregivers.

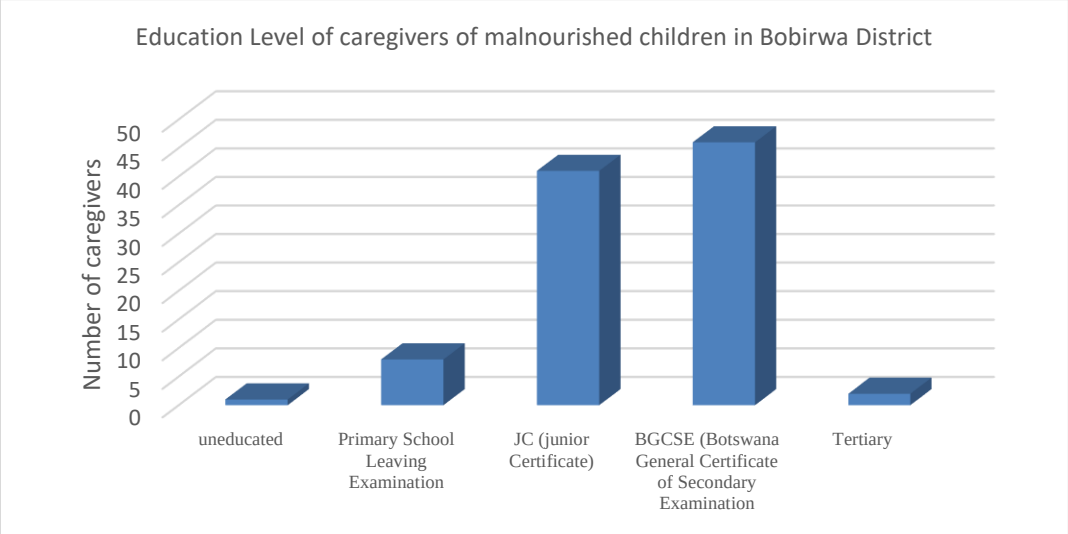


Figure 3: Profile of Education of caregivers

These results indicate that caregivers have fairly good education base, with most of them having attained secondary school education.

A chi-square test was conducted to explore whether education level was associated with change in KAP score, using the two categories on one hand and improvement in KAP score on the other. The Table 3 below shows the frequencies of outcome versus education level.

Table 3: Cross tabulation between Education level of caregivers and KAP

Outcome / **Education category**	**Improvement**	**No improvement**	**Total**	**Chi value (p-value)**
Uneducated	1	0	1	
PSLE (Primary School Leaving Examination	3	5	8	
JC (junior Certificate)	32	9	41	
BGCSE (Botswana General Certificate of Secondary Examination	38	8	46	
Tertiary	2	0	2	
Totals	76	22	98	**χ^2 = 118.49 (p= 0.000).**

All expected cell frequencies had a value greater than 5. As can be appreciated, there was a statistically significant difference between education category and change in KAP.

4.1.3 Effect of facility on improvement in KAP

The malnutrition rehabilitation program was administered in different facilities, which translates to different teams implementing the program. Did the site of administration have an effect on outcome of KAP improvement?

A chi square test was conducted to test the relationship between clinics and change in KAP. Results are presented in table 4.

Table 4: Cross tabulation between clinics and change in KAP

Facility	Number of subjects in study	Number of subjects with KAP improvement	Number of subjects with no KAP improvement	Chi value (p-value)
Borotsi Clinic	25	11	14	
Mabeleng Clinic	17	2	15	
Molalatau Health post	15	5	10	
Tsetsebjwe Clinic	8	1	7	
Mathathane Clinic	12	0	12	
Mabolwe	5	3	2	
Tobane	4	0	4	
Semolale	6	0	6	
Robelela	3	0	3	
Sefhope	6	0	6	**χ^2=23.943(p= 0.001).**

The data was entered into an r x c table and a chi square test was run to determine whether cells would contain frequencies less than 5. 14 cells had values of less than 5, making the data unsuitable for a chi square test. Therefore, a Fisher's exact test was conducted to explore whether the place where the program was implemented was associated with change in KAP score. There was statistically significant difference between clinics and change in KAP, Fishers statistic =23. 943 (p= 0.001). The Phi coefficient (φ) was 0.545.

This indicates there was a difference in performance between different health care worker teams performance in improving the KAPs of caregivers.

4.1.4 Opinion of Caregivers

In the section of KAPs, caregivers were asked to voluntarily state in their own words their opinion about the child's condition vis a vis and the program generally. The information was put in thematic groups that formed the basis of deciding whether or not there was improvement in KAPs. The thematic answers are presented in the table below. Table 5 shows the thematic answers given by the respondents.

Table 5: Thematic Answers

Thematic answer	Number of respondents
Congenital malformations	21
Unbalanced diet	19
Poverty	20
Diseases related to hygiene	54
Genetic make-up of the person	27
Other vague answers difficult to characterize	15

These statements indicate that a significant number of caregivers attribute the child's condition to factors they cannot do anything about.

Subjects Own Words

There was general skepticism about, and virtual hostility to the program. Apart from what they wrote in the questionnaires, some clients wrote letters to stress their points. Below are some of the letters. They are written verbatim as they appear, with a translation in italics below;

I. Ke le (XXXXX) maagwe (YYYYY) ga ke kone go tsisa ngwana tsatsi le letsatsi ka gore (YYYYY) ke lerapo la gagwe le a tshotshweng ka lone. Jaanong gagona phethogo le fa ke mo tisa sepatela

Signed- XXXXX

- *I (XXXXXXX) the mother to (YYYYYYY) am not able to bring the child to the clinic day by day because his condition is due to the way he was born (his genetic makeup). Therefore, there is no improvement expected even if I bring him to the health facility.*

II. Ke le (MMMMM) mmaagwe (NNNNN) ga ke jese ngwana ka lebaka la gore ga ke batle a ja mosepateleng. Ngwana yo e se gore bokete jwa bofokodi wa ke gore one amo molemo jaanong ke bo ke motegodisa one ke gone se se dirileng gore a lathe bokete jwa mmele

Signed XXXXXX

- I (LLLLL) mother to (KKKKK) am not going to feed my child because I don't want my child to feed in the clinic. This is not because of poverty it's because the child was taking a certain medicine. I consequently realized that the medicine makes the child to have fever, so that is the reason the child is underweight.

Signed LLLLL

4.2 Discussion

There are several aspects of these results that indicate ineffectiveness in the health promotion efforts of improving KAPs;

To begin with, only 38.3% of subjects showed any improvement in KAPs. Secondly, scrutiny of the thematic answers indicate a strong belief in inborn causes of malnutrition. Arguably, genetic makeup and congenital malformation can be grouped together, under inborn characteristics for which nothing can be done. It is significant that no less than 47 (almost 50%) of the subjects believe that. This implies that even when other issues like hygiene are deemed to be causes, they believe there is an underlying inborn problem they can do nothing about. Thirdly, it is significant that 3 participants on their own volition wrote letters with implied boldness to press their point. The message in all three letters is that the problem of their children is inborn and the efforts the program is making are futile. Moreover, they wouldn't participate in it anymore. The second letter even blames medical treatment for the plight of the child, stating that medicine administered leads to fever which then makes the child underweight.

These points indicate that the health promotion component of the program has negligible effect in improving the knowledge, attitudes and practices of the targeted population. The fact that the

health facility had at least four months of almost daily contact with the caregivers coupled with persistent wrong beliefs and a hostile attitude as shown in the letters indicate a clientele who are far removed from the concerns of the health care workers as far as the program is concerned.

Dismal performance of nutrition education is not peculiar to our setting. In Tanzania, Munuo and colleagues conducted a research assessing performance of nutrition information in regard to chronic kidney disease patients in hospital setting. They found that the medical fraternity across all cadres including medical specialists, general medical practitioners, nurses and support staff had poor knowledge scores and performed dismally in nutrition education for their patients (Munuo et al, 2016).

The developed world does no better in this regard. In the United States of America, poor performance in health education in clinical and preventative medical practice was found to be not only prominent but consistently so, driven primarily by low emphasis on nutritional aspect of medical training in all cadres (Kris-Etherton et al, 2014). In this quoted paper, the authors describe research projects that replicated this finding in the United Kingdom and Australia. They recommended inclusion of a bigger component of nutrition in the training of health personnel.

In Korea, Kim and Choue found that nurses had positive attitudes regarding nutritional status of their patients. However, they were poorly equipped both to screen for nutrition deficits, and provide health education regarding the same (Kim and Choue, 2009).

Turning to non-medical professionals who teach nutrition, a study in California found that teachers in high school performed poorly in providing nutrition education, which is part of their teaching curriculum. Factors related in this poor performance were lack of time and unawareness of resource materials (Jones & Zidenberg-Cherr, 2015).

Concerning the opinions expressed by the subjects concerning the program in their letters, it is evident that our population does not own the program, and thus does not share the same concerns about the nutrition state of their children with the HCWs. The problem the program seeks to address can be described as a normative need, perceived as a need only by the health care personnel. This implies that the target population requires extensive engagement in the setting up of the program, with close supervision in the implementation. In their book on nutrition education, Story, Holt and Sofka advise intensive engagement, arguing that food is more than nutrition. They postulate that food is intricately tied to culture, individual and communal identity and a source of

consolation and joy for all age groups (Story, Holt, & Sofka, 2002). This suggests that if there is hope to make a difference, rigorous interaction has to be part of a nutrition related program.

This study found out that both the age and education level of the care givers and the site of program administration have a statistically significant effect on changes in KAP. Intuitively, these findings are not surprising. The younger and the more educated are likely to comprehend health education compared to older and less educated subjects. In support of this, a study in Kweneng District explored performance of different caregivers in distribution and administration of Oral Rehydration Solutions in the community. The researchers found that older caregivers(grandmothers) performed poorly in this regard compared to younger (Jammalamadugu et al, 2013).

The site of program administration particularly is telling because it may be an indicator of staff commitment or capability in giving the health messages. This point is supported by the Munuo study mentioned above.

These results indicate that resources put in health education are likely to have an impact on changing KAPs.

The demographic profile of our study subjects offers some points worthy of note. Most of the caretakers are single mothers, a finding that has been consistent in other studies in the country (Turner, 1981; Seleka et al, 2008 ; Nnyepi, Mmopelwa, & Codjia, 2010). Single parenthood in the face of other factors, like food insecurity, are associated with inadequate care for the growing child propagating malnutrition. In these circumstances, health education, or even the provision of food in the clinic may not by itself solve the problem. The social aspects have to be addressed. As it has been recognized for a long time ((Turner, 1981), malnutrition cannot be addressed as a physiologic problem at the individual level. It is an indicator of a complex societal problem, more so in a society where Government support is readily available.

Malnutrition has negative economic, social and cultural effects not only on the individual, but on the society as a whole. It is a problem that has been described largely by politicians and the media as a national embarrassment in India (Mailtoday , July 11, 2012) , Guatemala (The economist, Aug 2009.) and South Africa. It results in poor growth and development, reduced cognitive capacity perpetuating incompetence and economic deprivation. Moreover no less than 50% of

childhood deaths in the developing world are related to malnutrition, making it a major contributor to child mortality (Black et al., 2009;Murray et al., 2012).

All these points indicate that to deal with malnutrition effectively, Health Education (HE) is an essential component. As shown in this study, there is a large gap between the perceptions of the health care workers and the target population, where malnutrition is a normative need. In Korea, Kim, Yoo and Jung (2014) did a study investigating HE needs of immigrant women. The focus of their study were observed poor health outcomes in this socially disadvantaged group. They found that the biggest HE requirement their subject felt they needed was to understand the culture of the host and means of communicating well so that they can improve access to care. The study came up with a set of recommendations that were evidence based (Kim, Yoo, & Jung, 2014).

5.0 Conclusion

This study illustrated missed opportunities in HE. The fact that age and education level of the care givers and site of administration of the program have a statistical significant effect on KAP all indicate that the study population have a good chance of responding to health education. This is despite the seemingly poor buy in from the subjects.

Social aspects of the subject's social life that have a bearing on child rearing practices will require to be addressed.

The study recommends refresher training for health Care workers in nutrition education. It also recommends refocusing of the whole program, with an emphasis on community participation from inception and design to administration and evaluation. There is also need to address other factors such as social economic status. As mothers seem to be fairly well educated, improvement in child rearing skills may be considered as a long-term solution.

6.0 References

1. Mach, O., Lu, L., Creek, T., Bowen, A., Arvelo, W., Smit, M., Handzel, T. (2009). Population-Based Study of a Widespread Outbreak of Diarrhea Associated with Increased Mortality and Malnutrition in Botswana, January – March, 2006, *80*(5), 812–818.
2. Creswell, J. W. (2003). *Research design Qualitative quantitative and mixed methods approaches*. *Research design Qualitative quantitative and mixed methods approaches*. https://doi.org/10.3109/08941939.2012.723954

3. Munuo, A. E., Mugendi, B. W., Kisanga, O. a., & Otieno, G. O. (2016). Nutrition knowledge, attitudes and practices among healthcare workers in management of chronic kidney diseases in selected hospitals in Dar es Salaam, Tanzania; a cross-sectional study. *BMC Nutrition*, *2*(1), 6. https://doi.org/10.1186/s40795-016-0045-y

4. Kris-Etherton, P. M., Akabas, S. R., Bales, C. W., Bistrian, B., Braun, L., Edwards, M. S., Van Horn, L. (2014). The need to advance nutrition education in the training of health care professionals and recommended research to evaluate implementation and effectiveness. *American Journal of Clinical Nutrition*, *99*(5). https://doi.org/10.3945/ajcn.113.073502

5. Kim, H., & Choue, R. (2009). Nurses' positive attitudes to nutritional management but limited knowledge of nutritional assessment in Korea. *International Nursing Review*. https://doi.org/10.1111/j.1466-7657.2009.00717.x

6. Jones, A. M., & Zidenberg-Cherr, S. (2015). Exploring Nutrition Education Resources and Barriers, and Nutrition Knowledge in Teachers in California. *Journal of Nutrition Education and Behavior*. https://doi.org/10.1016/j.jneb.2014.06.011

7. Story, M., Holt, K., & Sofka, D. 2nd Edition (2002). *Bright Futures in Practice*. National Centre For Maternal and Child Health. Georgetown, USA

8. Jammalamadugu, S. B., Mosime, B., Masupe, T., & Habte, D. (2013). Assessment of the household availability of oral rehydration salt in rural Botswana. *PanAfrican Medical Journal*, *15*(1), 1–9. https://doi.org/10.11604/pamj.2013.15.130.2793

9. Kim, H. J., Yoo, E. K., & Jung, E. S. (2014). *Needs of Health education for Foreign women of Multi- cultural family in Korea,* Advanced Science and Technology Letters (Healthcare and Nursing http://dx.doi.org/10.14257/astl.2014.61.20

10. Turner, M. (1981). A Nutritional Survey in Moshaneng, Ngwaketse, Botswana: Preliminary Findings and Observations. *Geography Journal*, *5*(4), 339–346.

11. Seleka, T. B., Makepe, P. M., Kebakile, P., Batsetswe, L., Mmopelwa, D., Mbaiwa, K. A., & Jackson, J. (2008). *The Feasibility of Mandatory Forticification of Cereals in Botswana*. Lightbooks. Retrieved from www.lightbooks.net

12. Nnyepi, M. S., Mmopelwa, D., & Codjia, P. (2010). Child nutrition and household economic situation in the context of rising food prices: A baseline study in Mabutsane and Bobirwa. In *Thari ya Bana, 2010* (pp. 8–11).
13. Editorial. (2012). Mailtoday. *January 11, 2012*.
14. NA. (n.d.). Malnutrition in Guatemala A national shame. *The Economist*.
15. Turner, M. (1981). A Nutritional Survey in Moshaneng, Ngwaketse, Botswana: Preliminary Findings and Observations. *Geography Journal*, *5*(4), 339–346.
16. Kim, H. J., Yoo, E. K., & Jung, E. S. (2014). Needs of Health education for Foreign Women of Multi- cultural Family in Korea. *Advanced Science and Technology Letters (Healthcare and Nursing)*, *61*, 81–84.